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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,254	02/11/2004	Hiroshi Iwata	0397-0475P	9897

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EXAMINER	
NGUYEN, TAN	

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/775,254	IWATA ET AL.	
	Examiner	Art Unit	
	Tan T. Nguyen	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-22* is/are allowed.

6)☒ Claim(s) *1,3-5,8 and 9* is/are rejected.

7)☒ Claim(s) *2,6 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/04, 8/04, 7/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The Information Disclosure Statements submitted by Applicants on February 11, 2004, August 13, 2004 and July 7, 2005 have been received and fully considered.

2. Applicants are requested to submit a substitute specification since the changes in the Preliminary amendment submitted on September 9, 2004 are substantial.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 3-5, 8-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,894,929 (hereinafter Matsuoka et al) in view of WO 03/075359 (hereinafter WO '359). Although the conflicting claims are not identical, they are not patentably distinct from each other because Matsuoka recited in claim 1 a method of programming a semiconductor memory device having a plurality of memory cells, wherein the memory cell is a nonvolatile memory cell including a gate electrode formed on a semiconductor layer via a gate insulating film, a channel region disposed under the gate electrode, diffusion regions disposed on both sides of the channel region, and memory functional units formed on both sides of the gate electrode and having the function of retaining charges. Matsuoka et al. did not recite the amplifier. It is inherent that memory device

includes amplifier coupled to the memory cells to sense the data stored in the memory cells.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the memory device in claim 1 of Matsuoka et al. by providing an amplifier coupled to the memory cells.

The rationale is as follows: A person of ordinary skill in the art would have been motivated to use the amplifier to sense the data stored in the memory cells or to write the input data to the memory cells.

Regarding claim 3, WO '359 disclosed in Figure 3 a semiconductor storage device having two charge attaching part [61, 62] having a silicon nitride film [15], which carries out the trap of charge, sandwiched between insulator films [14,16]. The charge attaching part [61, 62] overlaps with a part of the diffusion regions [17,18].

Regarding claim 4, WO '359 disclosed in Figure 3 the silicon nitride film [15] having a surface substantially parallel with the surface of the gate insulating film [12],

Regarding claim 5, WO '359 disclosed in Figure 3 the silicon nitride film [15] is disposed substantially parallel with the side face of the gate electrode [13].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the memory device in claim 1 of Matsuoka et al. by disposing the charge attaching parts parallel and overlapping the diffusion regions as WO '359 disclosed.

The rationale is as follows: A person of ordinary skill in the art would have been motivated to dispose the charge attaching parts parallel and overlapping the diffusion

regions to optimize the charge migration from the diffusion regions to the charge attaching parts.

Regarding claims 8-9, WO '359 disclosed the memory device can be used for the pocket electronic equipment of a cell drive, especially a Personal Digital Assistant.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the memory device of Matsuoka et al. in the portable electronic equipments as WO '359 suggested.

The rationale is as follows: A person of ordinary skill in the art would have been motivated to use the memory device of Matsuoka et al. in the portable electronic equipments to reduce the size of the equipments.

5. Claims 2, 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 10-22 are allowed.

7. The following is an examiner's statement of reasons for allowance:

The prior art failed to show or suggest the one or more transistors connected in series with the memory as in claim 2, or the thickness of the insulating film as in claims 6-7, or the pair of memory cells having structure similar to claim 1 but the outputs of the pair of memory cells are inputted to the sense amplifier as in claims 10-22.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oruga et al., Tzeng and Forbes et al. are cited to show memory devices having vertical floating gates.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan T. Nguyen whose telephone number is (571) 272-1789. The examiner can normally be reached on Monday to Friday from 07:00 AM to 03:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho, can be reached at (571) 272-1777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan T. Nguyen
Primary Examiner
Art Unit 2827
August 22, 2005